

04

Cutting, Manufacturing and Assembling Suggestions

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Cutting, Manufacturing and Assembling Suggestions

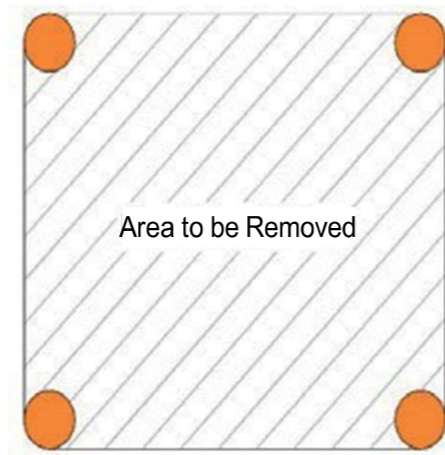
A — Cutting information

- You may use waterjet cutting machines utilized in marble and natural stone cutting to process our porcelain slabs.
- You should ensure that the maintenance of the machine to be used has been made.
- The workbench the machine will be placed on should be flat, balanced, clean, robust and durable.
- The workbench should be cleaned of the material wastes from previous processes.
- Machine apparatus should be suitable for porcelain processing. Because of this, please get information from your machine supplier.
- The operating parameters in this guide are generated by prominent technicians and operators and they are indicative only. The technical values of the machines and apparatus that you use should be reviewed and trial tests should be performed on the sample.
- A negative result from the trial test you don't desire or breaking during cutting may have occurred due to inaccurate parameter values, unsuitable water pressure, workbench surface that doesn't meet the necessary specifications, inappropriate machine apparatus like a saw blade and unstable performance of machine apparatus.

B — Cutting With Bridge Saw Blade

There should be no object on the machine table on which we will put porcelain slabs to cut. Since cooling the saw blade is essential while cutting, the coolant should properly contact it.

If a section is desired to be cut out for a sink or a stove with a bridge saw blade from the piece cut in a specific size, first of all, it is necessary to open holes at the corners of that section with the help of a diamond hole punch, as shown in the figure below. The diameter of the diamond hole punch should be maximum of 624mm.



C — Parameters

CUTTING WITH BLADE	CUTTING TYPE	DIAMETER OF BLADE (mm)	RPM	FEED SPEEDmm / MIN	ENTRY / EXIT FEED
Slab 12mm	FLAT	350 400 500	1800 / 1900 1600 / 1800 1500 / 1400	1000 / 1400 1000 / 1400 1000 / 1400	REDUCE BY 50%
	INCLINED	350 400 500	1800 / 1900 1600 / 1800 1300 / 1400	500/ 800 500 / 800 500/ 800	REDUCE BY 50%

Crucial Information

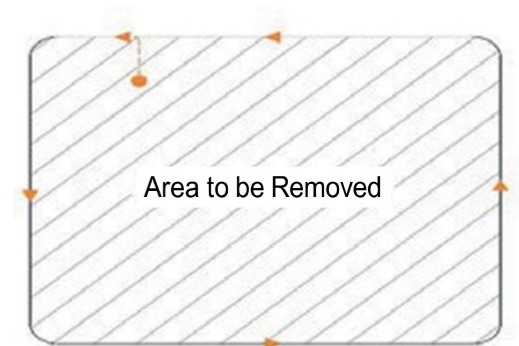
- Attention should be paid to ensure that the blades are diamond, designed for cutting large-size porcelain slabs. Ask your blade supplier definitely for technical information.
- In cases where the parts will be cut for the sink and stove with the help of a blade, do not lower the blade on the slab until the holes are opened at the corners of the area to be cut out. When lowering the disc, it is required to be very slow and controlled.
- Before using an unused blade, the blade diamonds should be opened by cutting the residual material several times.
- The rotation direction of the blade should be adjusted by the cutting direction.
- If 45-degree angle cutting is carried out with the bridge saw machine after sizing, the piece to be cut in a specific size should be widened by 1cm for each edge to be cut by a 45-degree angle. If the product is manufactured this way, the bridge saw blade can cut 1cm inside during the 45-degree angle cutting process and the edges cut by a 45-degree angle can be produced with better quality and without cracking.
- In the 45-degree angle cutting process, the feed speed of the bridge saw blade should be slower than that in vertical cutting.

D — Waterjet

There should be no object on the machine table on which we will put porcelain slab to cut

Sequence of Procedures

- The slab is cut according to the desired external sizes. In the cutting process, the waterjet cutter should enter the slab from outside and drill it completely.
- When opening the inner holes for the sink and stove, the procedure should start a minimum of 5cm inside the area to be cut out and end a fewcm inside.
- Corner turns of the areas that have been cut out should match the sizes specified in the technical manuals of the appliances, such as the sink and stove. When size isn't specified, the turns should be at least in 5mm diameter and corner turns should not be adjusted, having a 90-degree.

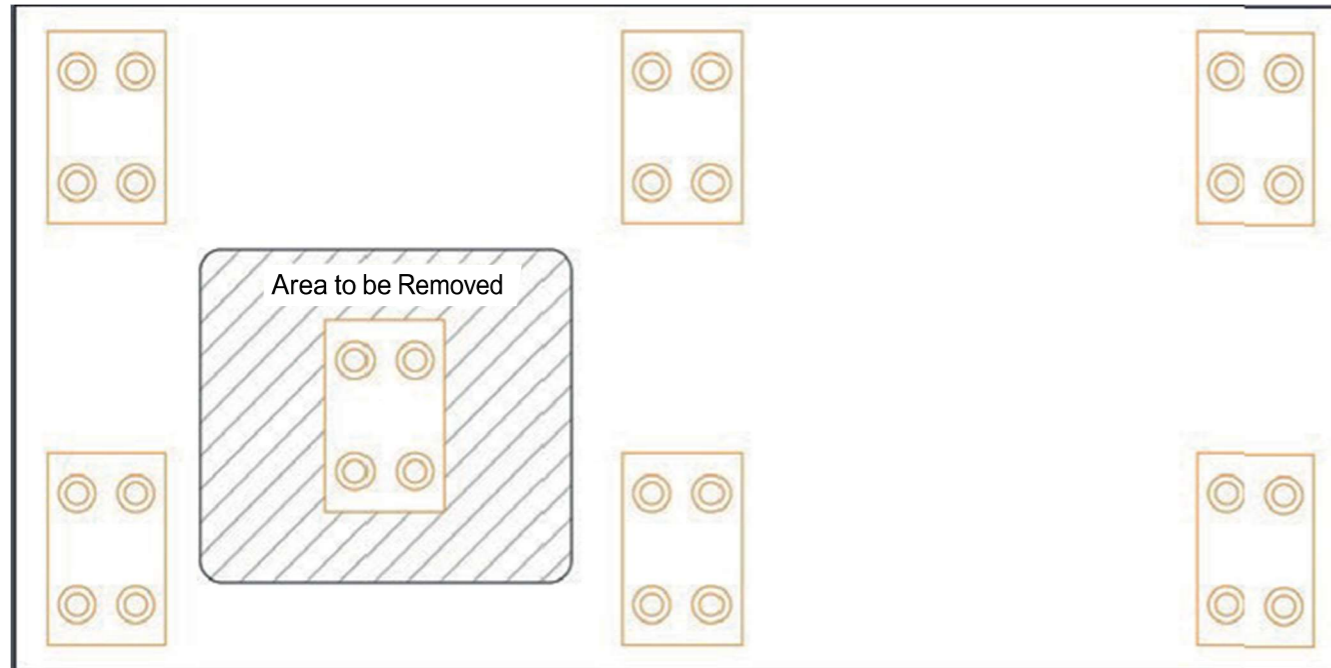


E — E-CNC / Digitally Controlled Drill

Before starting, it should be ensured that the linear vacuum nozzles of the countertop are cleaned of any residue. It should be ensured that there is sufficient support for the slab.

It should be ensured that there is a vacuum nozzle under all slabs, especially the section to be cut.

Lorem ipsum



It should be ensured that sufficient water is used to cool the instrument internally and externally during production.

Sequence of Procedures

- Opening hole with a krone drill bit
- Preparing the parts to be cut at least a hmm drill bit is needed for all internal corners.



Firstly, a hole should be opened in the part to be cut using a krone drill bit. Then, we should get closer to the cutting line using a milling cutter.

As we get closer to the cutting line, the cutting should be carried out, which will be curved. We should not get closer to the cutting line vertically as it may create notches.

When completing the cutting procedure, the speed should be reduced to 50%.

Tips for digitally controlled drills,

- Krone Drill Bit

Particularly at the end of the drilling process, the slab should be drilled as slowly as possible. Lower the pressure on the krone by lifting it a little before completing the drilling.

- Milling Cutter

Firstly, it should be started from the hole drilled with the krone drill bit. The milling cutter should not be directly approached to the surface. It should be cut 0.5mm only for the first two times, then 2mm should be cut for each pass. A portion larger than 5mm should not be cut from a 12mm slab.

- Cutter Bit

As it will cause fragmentation during cutting, don't use the vibration feature.

Parameters for Digitally Controlled Drills

Thickness (mm)	Cutter Bit	RPM	Feed Speed (mm/min)
12mm	Krone	4500-5500	150
	Milling	8000- 10000	250

F — Manufacturing Suggestions

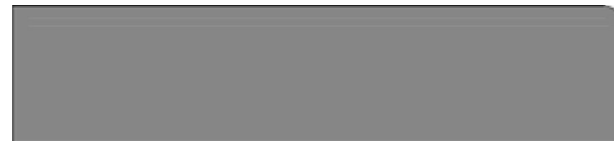
It is recommended to use 12mm thick products for countertops and panel coverings between the countertop and the cabinets and products of 3mm thickness for cabinet door coverings.

Edge Details

The following details for edges are recommended for countertops.



2mm chamfer



R 2mm chamfer

Being a 45 - Degree Connected Edge



2mm chamber



R 2mm chamfer

Crucial Information

- The corners of the countertops should not be left sharp.
- The less the edges are left sharp, the less they are affected by external impacts.
- No sharp corners should be left where (Hilton-type sink, etc.) there is a high risk of impact. However, it should be noted that in cases where the rasping process is carried out more than necessary, the inner color of the material will be seen.
- We recommend using porcelain pads for edge chamfering and polishing.
- Dry or water polishing can be done. We recommend you use pads numbered 100, 200, 400, 800, 1500 and 5000 for dry polishing and the pads numbered 100, 400, 800 and 5000 for water polishing, respectively.
- During the 45-degree countertop joining application, the 45-degree cut surfaces of both parts should be deteriorated with a porcelain cutting blade before attaching the countertop to its front side. (the deteriorated parts should be cleaned of dust before attaching). Thus, the adhesive material will be more voluminous between the two parts during the procedure and lead to better attaching.



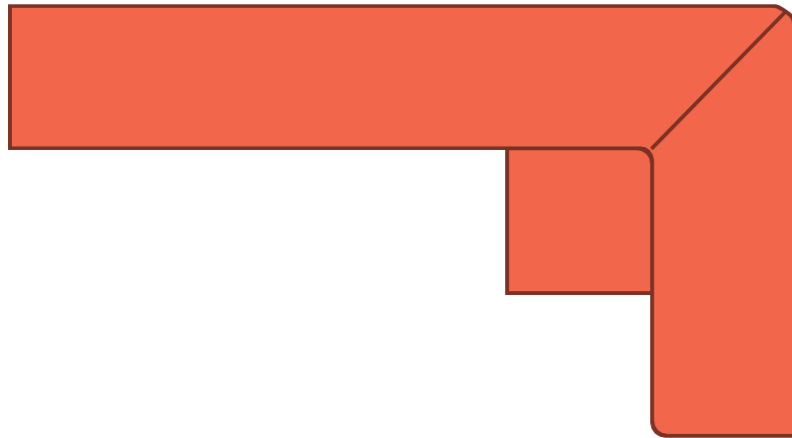
G — Carcass Application for Countertop

45 - Degree Countertops

While manufacturing the countertop at 45 degrees, a carcass that fits its front thickness should be placed under it. Before the carcass is attached, the surface on which the carcass will adhere should be deteriorated with a porcelain cutting blade.

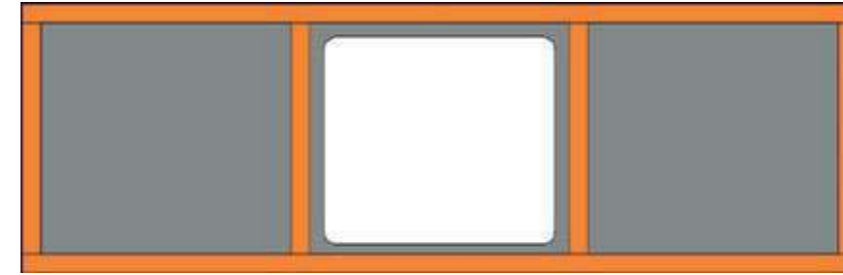
Materials used in making the carcass can be obtained from our slab, granite, or marble. But the marble or granite should be durable. If marble, in particular, will be used in making the carcass, it should neither be cracked nor prone to cracking. We recommend not making a carcass of 2cm thick marble. Full-length granite can be used if the carcass should be 2cm.

Don't use wood-based products while making carcasses. Using wood-based products may cause deformation, cracking, or separation at 45-degree joints as the expansion ratios of these products are different than that of our slab.



The procedure should be carried out along the perimeter of the countertop until the carcass in the figure comes up to the edges of the kitchen cabinet. Carcasses should be positioned transversely in the middle parts of the countertops, especially the longer ones, coming up to the center panels of the cabinet.

In addition, applying carcasses to the edges of the sections cut out for the appliances, such as sinks and stoves, will increase the endurance of the countertop.



If there is a tap hole on the countertop, we recommend you support that with a carcass.

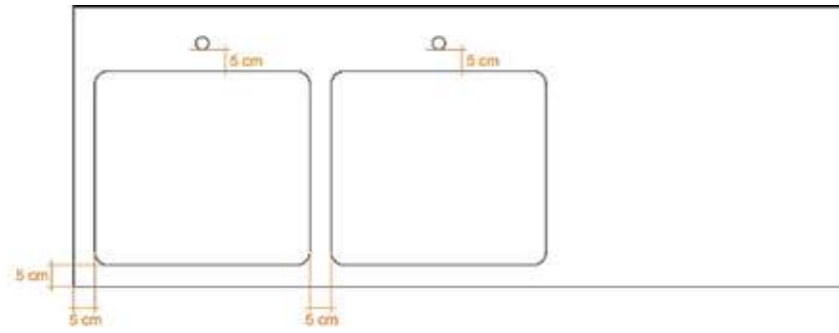
Countertops in Slab Thicknesses

Before installation, countertops manufactured in the original thickness without thickening should be transformed into a level floor in the same balance as the kitchen cabinet. Thus, there will be no possibility of deformation for the countertop's lower surface because it will be supported at every angle.

Joints and Internal Clearance Distances

Internal Clearance Distances

There should be at least 5cm space between the edge of the countertop and the hole to be opened on the countertop for sinks, stoves, or other devices.



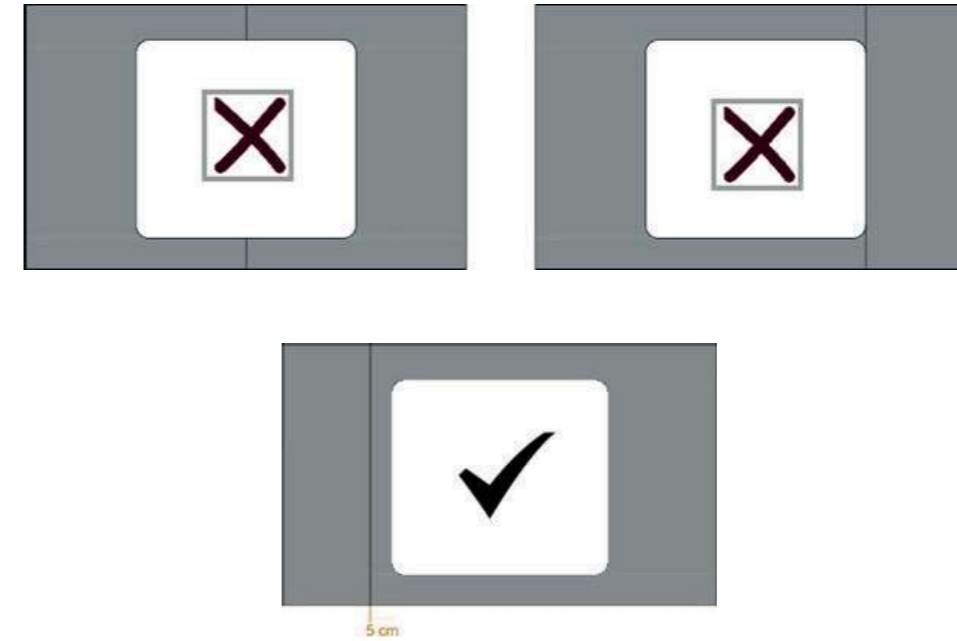
If the kitchen cabinets are appropriate, it would be better for endurance to leave a space longer than 5cm.

Joints

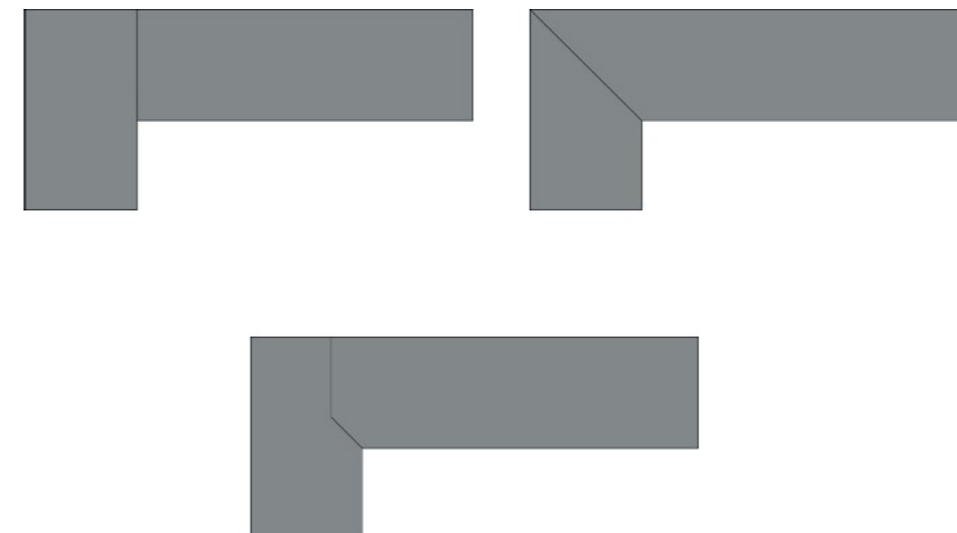
As shown in the figure, it is more appropriate to carry out production by adding a joint instead of manufacturing the parts that will remain thin on the countertop as a whole piece.



If the slab size is insufficient to produce the countertop as a single piece and joints are needed, sinks, stoves, or devices should not be installed on these joints or their edges without leaving space.

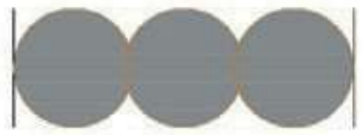


As seen in the following figures, you can add joints to the countertops manufactured in an L-shape.



Sockets and Switches

If it is desired to bore holes for sockets without waterjet technology, a circular drill could be utilized as seen in the figure below.



Attaching

Epoxy-based adhesives, used in adhering porcelain, can be applied so that our porcelain slabs form a 45-degree angle. Please contact for detailed information.

The adhesive used should be compatible with the color of product to be utilized.

In order for the adhesive to show its effect, the surface to be attached should be cleaned of dust. If the surfaces to which the adhering procedure will be applied are smooth, they should be deteriorated with a granite cutting blade.

Both surfaces of porcelain slab are porcelain and usable. Therefore, the surfaces to which the adhering procedure will be applied should be deteriorated before positioning a carcass under the countertop.



H — Kitchen Sink Application Types

Undermount Kitchen Sinks



The edges should be rasped until having a round shape with at least a 2mm diameter to minimize the risk of fragmentation and cracking.

Overhead Kitchen Sinks



It is the most robust type of sink application without the risk of fragmentation or cracking.

slab sink



Overhangs

In countertops manufactured with porcelain slabs, the overhangs may vary according to the features of the countertop. For example, the size X in the overhang desired to be formed for a four cm thick countertop may reach up to 30cm. You can go up to 15cm for the countertops in slab thickness.

To create more overhangs, they should be supported from below with various strengthening objects

To create more overhangs, they should be supported from below with various strengthening objects.



Installation

The height of the cabinet modules to be installed should have been adjusted and the modules should have been mounted to each other and fixed to the wall.

Due to the wall curvatures and potential structural movements of the building, it is advised to leave a 3mm gap where the countertop meets the wall. This gap should be filled with anti-bacterial silicone.

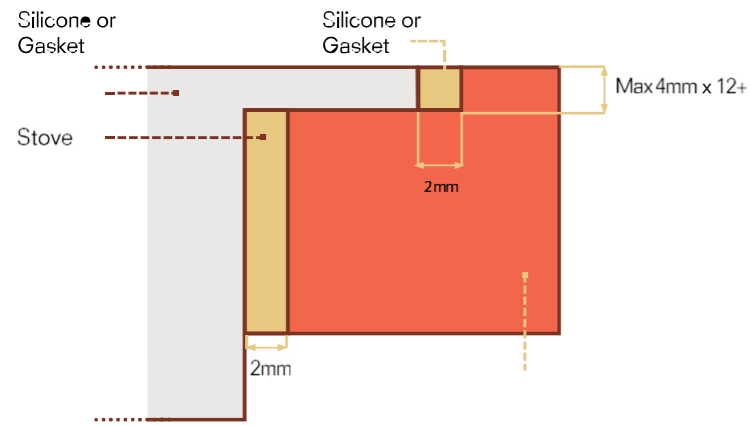
You must use silicone to fix the countertop to cabinet modules and the back panels to the wall. This will allow for thermal expansion. Epoxy adhesives and the like are not recommended.



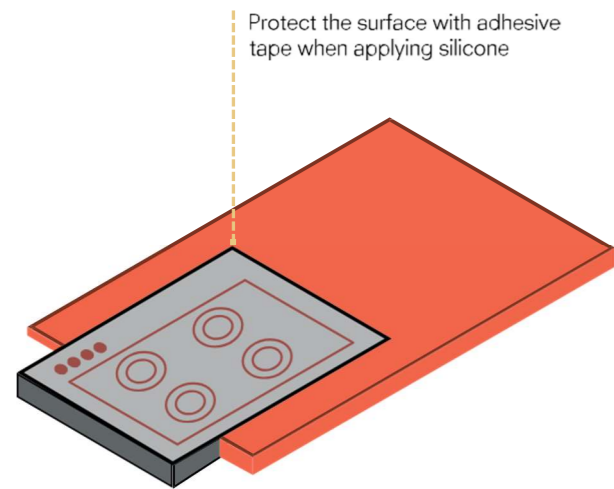
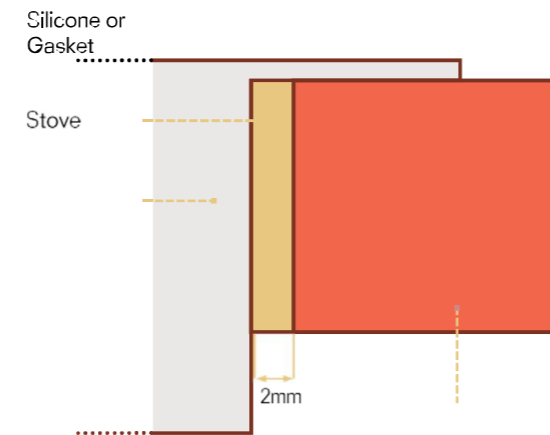
Hole Design for Sinks and Stoves

Due to the thermal expansion differences, a distance of at least 2mm should be left between the stove and slab surface if the manufacturer has not provided particular information about the hole on the 12mm porcelain slab for the sink and stove

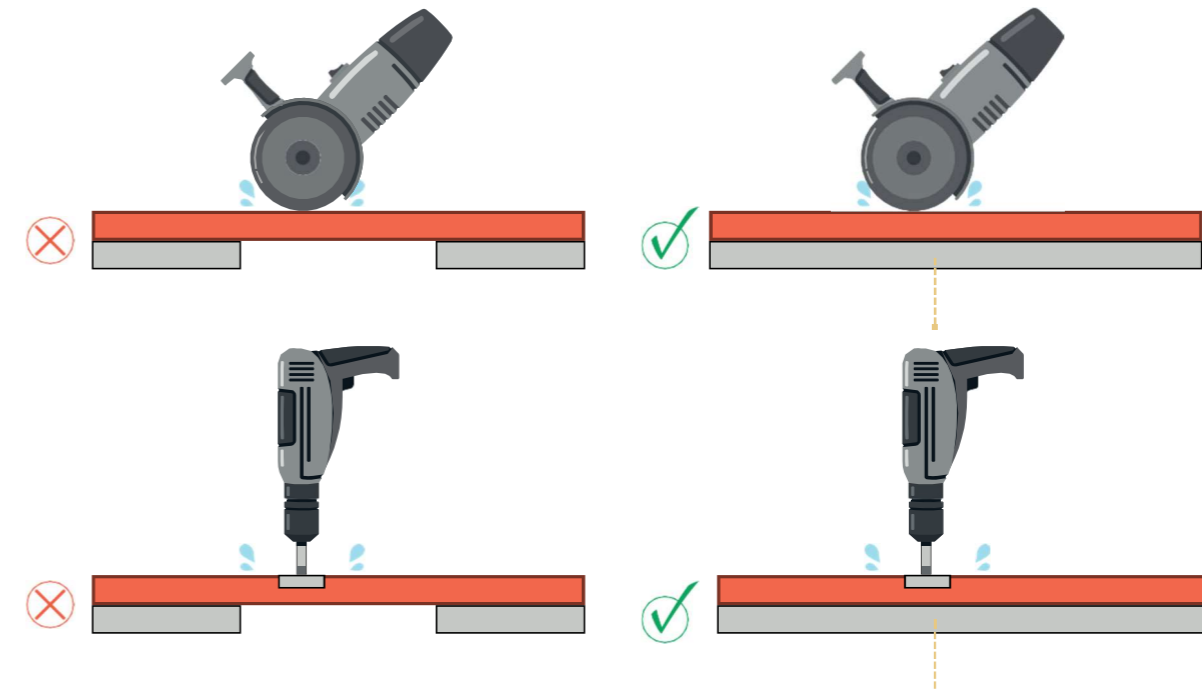
STOVETOP



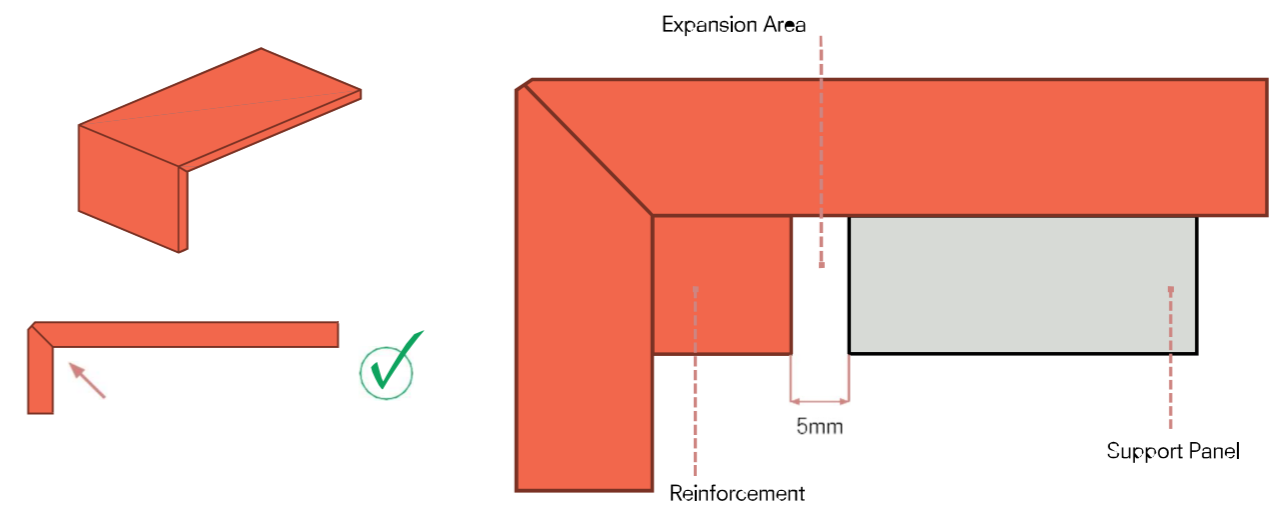
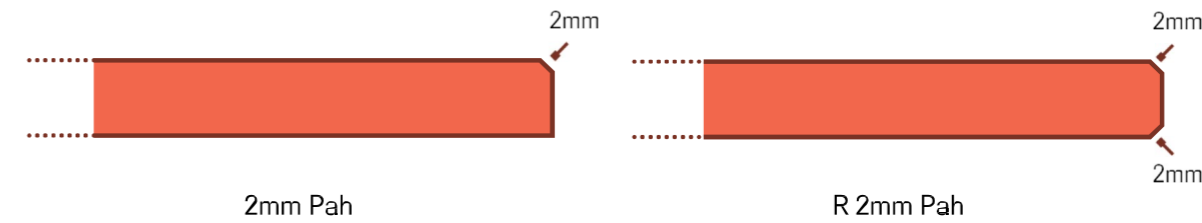
STOVE IN THE SAME LINE WITH THE COUNTERTOP



Manual Processing



Straight Edge and Grading



In 45-degree joints, the connection should be reinforced as follows.



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